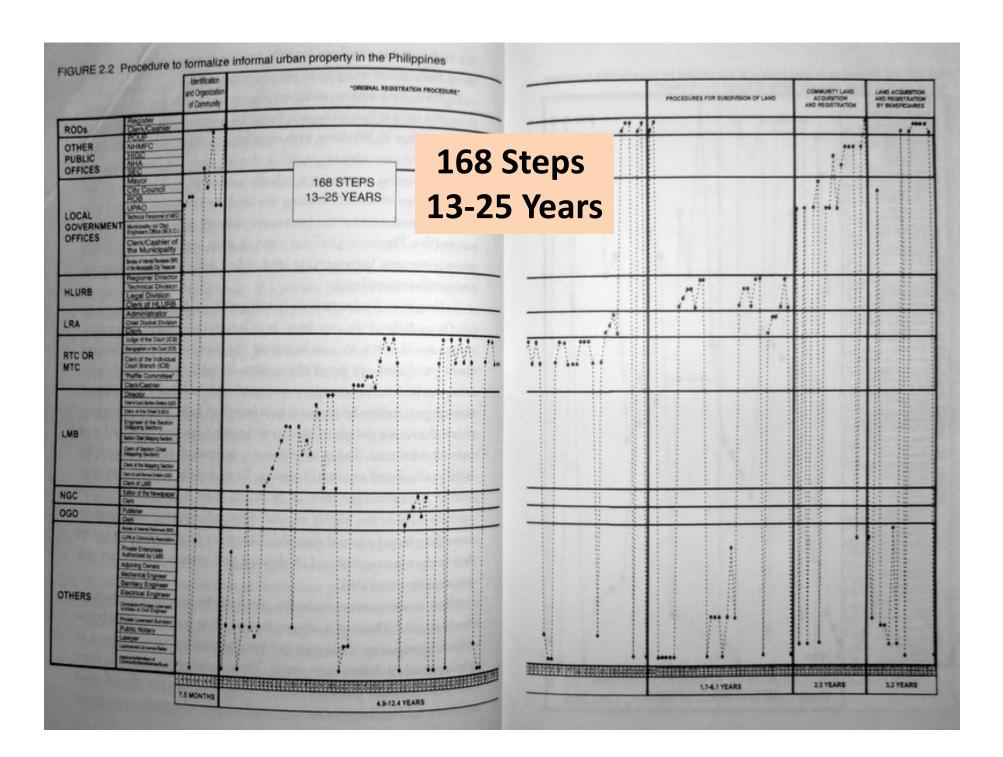


Outline

- The gold supply chain
 - Artisanal Mining Perspective
- Gold from conflict-affected and high-risk areas
 - Artisanal Mining Perspective

Opening Question: Effect of OECD due diligence guidance on ASGM

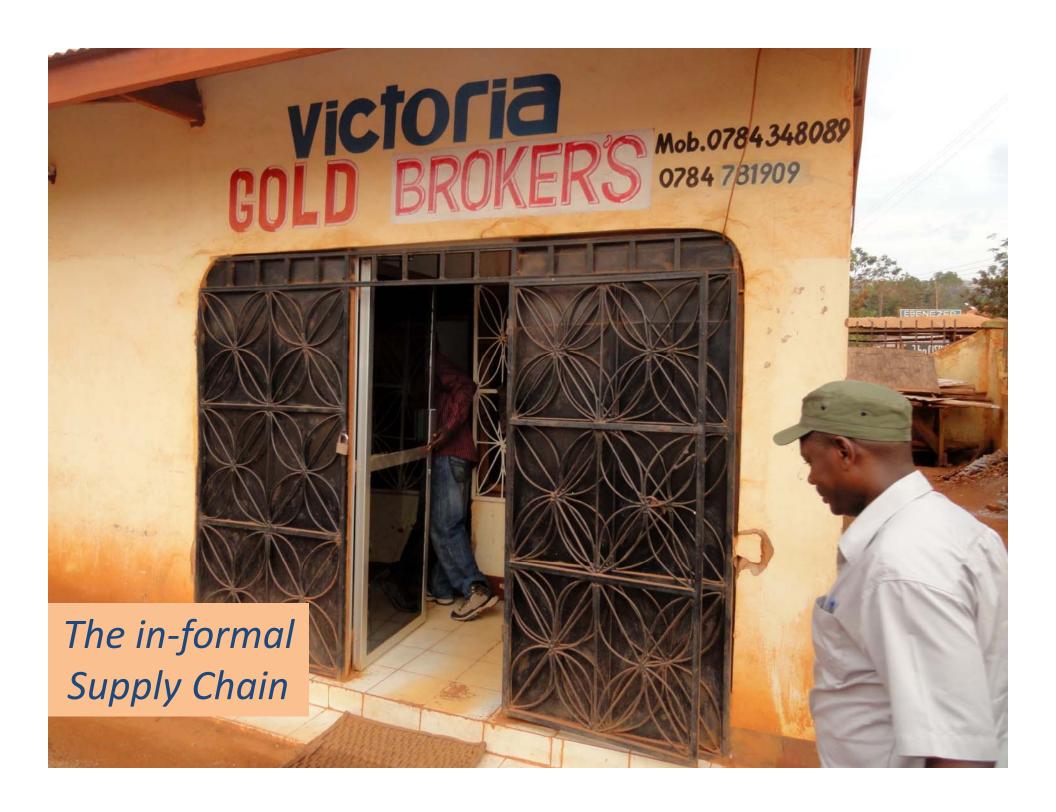
 Is Hernando de Soto's Mystery of Capitalism (2000) the fate of ASGM? or a wake up call on what not to do?



OECD Due Diligence

- To ensure not buying gold from bad guys
- Can it be designed to help ASGM miners and poverty and development?
- Will it help people or avoid risk for companies and shareholders?
- Will it increase or decrease conflict?







Complexity of the Current Supply Chain – low transparency



Gold Souk, Dubai, hundreds of shops, hundreds of businesses

ASGM

- It is a gold supply chain
- Exploitation of small deposits
- Low capital input, labour-Intensive
- Poor access to markets and support services
- Almost no presence of government
- Low standards, health and safety, environment
- Huge Development Opportunity

ASGM - A Gold Supply Chain

- A gold-based socio-economic system and community
- Includes miners, security (police, military, and mafia), retail merchants, health providers, gold shops, gold refiners, financiers, claim holders, and other service providers.
- Involvement formally, informally, legally, illegally, and extra-legally
- At least 90% are subsistence workers
- A linkage to the modern world

AM to Formal SM through Services

- Canada + US + Australia formalised their ASM sectors through provision of services
 - Transportation
 - Communication
 - Technical Services
 - Marketing
 - Capitalisation



Canada, 1890s

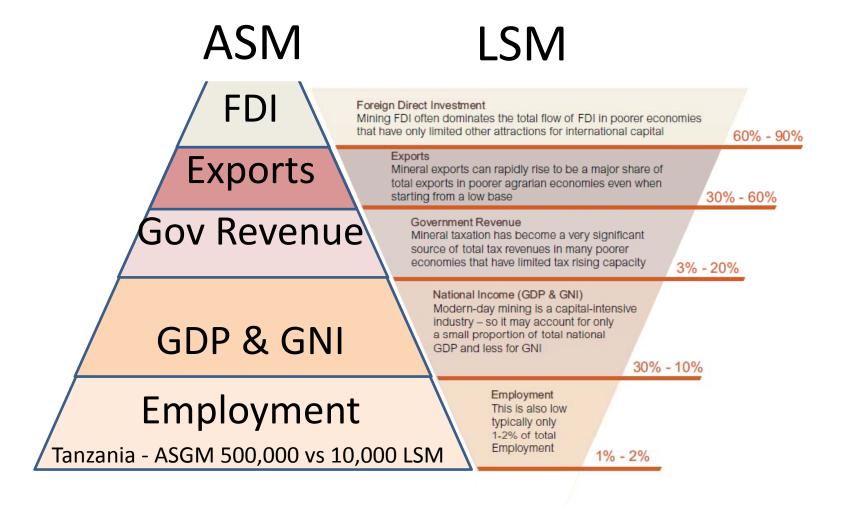


•Beginning of modern mining sector based on ASM

- •King Edward Hotel Stock Exchange 1903
- •Royal Canadian Mint 1903

ASGM 101

- ASGM has an inverted employmentproduction character compared to LSM
 - e.g. Tanzania 10,000 LSM vs 500,000 ASGM
 - Salary (US\$ 100 M) (US\$ 500M)
- 12-15% of world gold supply comes from 10 million people in "high risk areas" in 70 countries
- Huge wealth transfer from rich to poor



LSM triangle from : The Golden Building Block, World Gold Council, 2009

High-Risk Areas (as per OECD)

- areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence. Often characterised by widespread human rights abuses and violations of national or international law
- Most ASGM camps have significantly higher risks of numerous sorts and fit this description
 - poor security, organised crime, violence, labour exploitation, illegal land use, illegal chemical use; almost 100% in my experience (15 years)

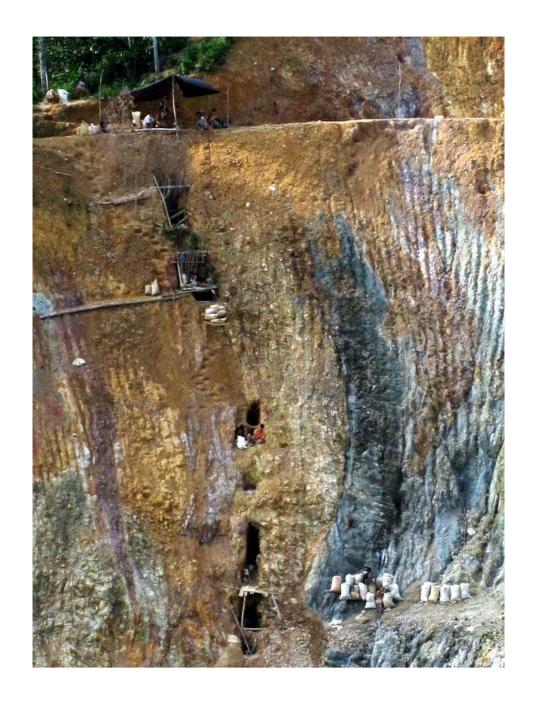
Conflict-affected and high-risk areas and ASGM

- According to OECD definition, at least 90 % of ASGM sites are minimally high-risk areas
- A subset are conflict-affected areas
- The current dataset is very weak. Red Flagging countries and ASGM sites very complicated – few experts exist
- The issue:
 - The development/control of the informal gold supply
 - Primary value (2011): 400 tonnes gold = 19 billion USD
 - Untraced fungible
 - 70 countries: Africa, Asia, South America
 - Sudan, Zimbabwe, West Africa, DRC, Indonesia, Philippines, Colombia, Peru, Brazil...

Ex.: LSM-ASM Conflict Indonesia

- Papua 10,000 ASM miners working in Grasberg's tailings illegally
- Straits Resources, Kalimantan 2500 miners using highly damaging and unsafe practices operate on straits' property in collusion with local authorities
 - Operational performance for Sep 2010 quarter was down due to an unexpected suspension of operations due to landowner access issues.

Mt Muro Puruk Cahu







Cyanide



Philippines

- 2000 Mindanao; ceasefire the Moro Islamic Liberation Front and the Philippine Armed Forces - allowed an end to the displacement of entire communities that were caught in the crossfire
- 2011 Mindinao is essentially a no-go zone for ASGM interventions but one of the most active areas
- 2011 Landslide deaths, a call for ASGM moratorium, but DENR states importance of role of ASGM in Philippino gold production – 70%







Due diligence in gold supply chain

- The OECD hopes to bring transparency to the gold supply chain from the top down through a paper trail
- That is possible using the Tiffany model: 50% from Bingham Canyon Mine in Utah, 50% recycled
- But is likely exclusionary for ASM who have the lowest capacity to follow due diligence

ASGM Supply Chain





Purification (quartering with silver)



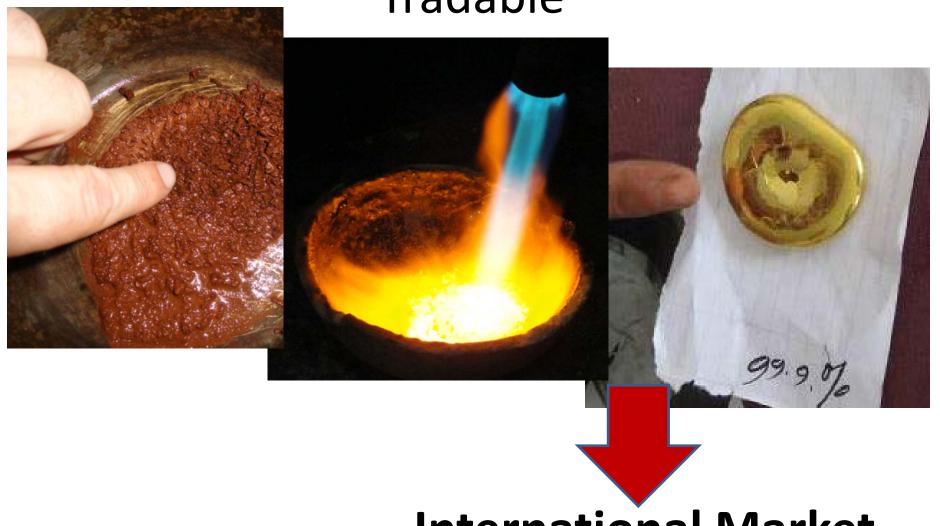
Purification (quartering with silver)



Purification (quartering with silver)



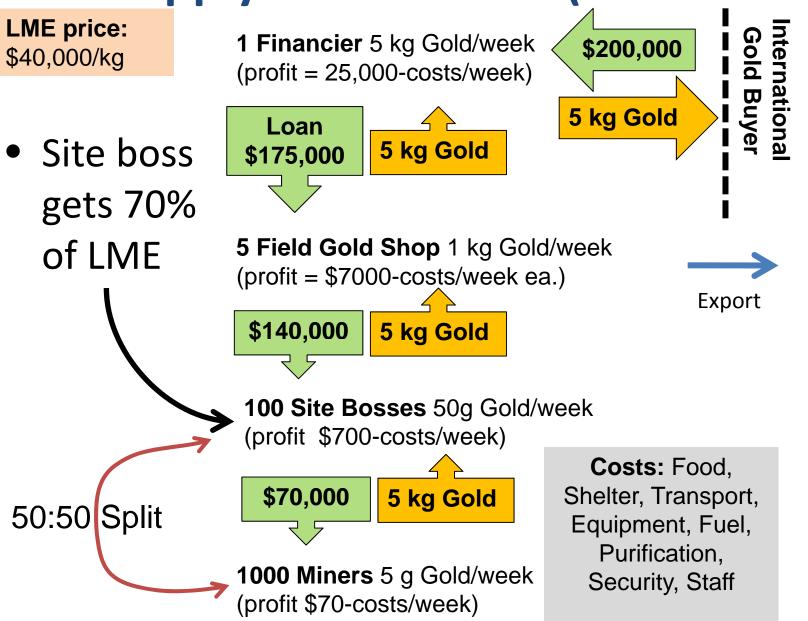
24 Karat Gold - Internationally Tradable



International Market

Supply Chain Model (70% model)

Refiner



Division of profits 37M (70.4%) (USD per year) Socio Illegal **Economic Security forces Claim holders** 4.5M (8.3%) **Structure** 1M (1.8%) **Merchants** Informal vs Financiers / **Gold shops** 2.8M (5.7%) 3.7M (7.1%) 3.6M (6.8%) illegal **ASM** miners players **Labour Force** 5300 (88.0%); **7000 USD** in supply & income Illegal chain Security Claim holders forces 200 (3.3%); 200 (3.3%); 5000 22000 **Merchants Gold shops Financiers** 25 (0.4%); 50 (0.8%); 250 (4.1%);

149000

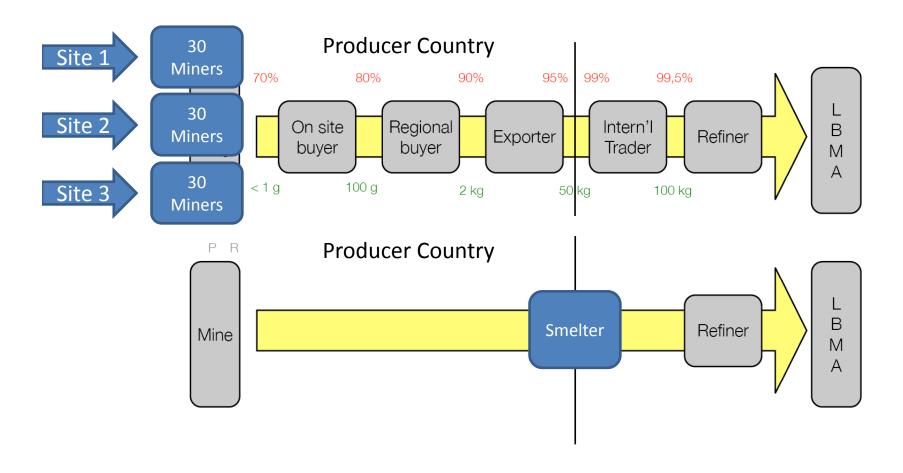
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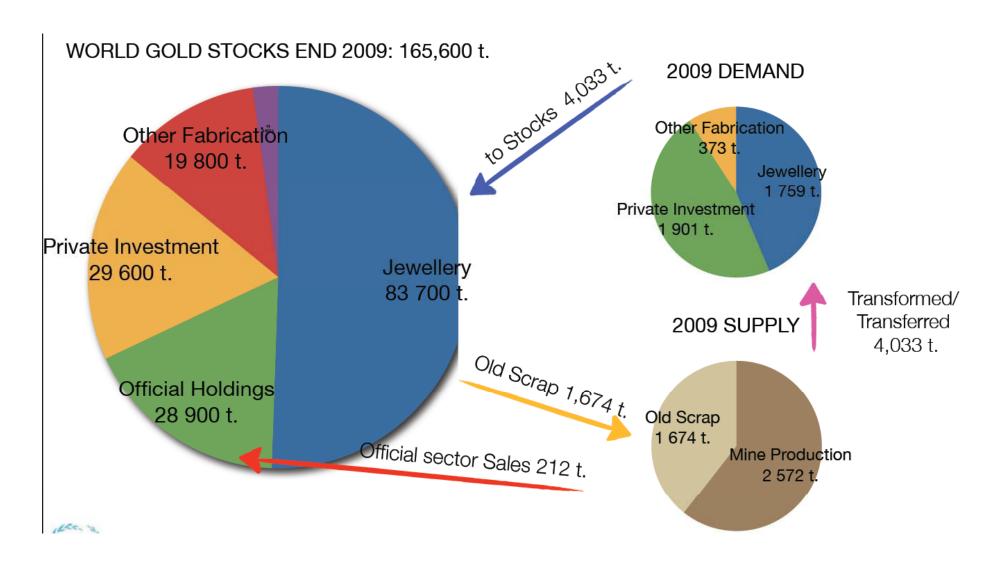
ASM miners

ASM vs LSM supply chain (Patrick Schein)

- Which is more complicated for due diligence?
- Which pays more into the local economy?

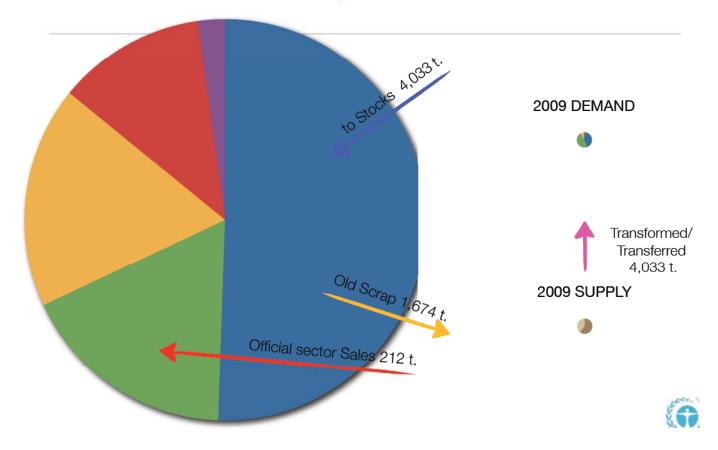


World Gold Market 2009



Mined gold, beginning now, accounts for ~1.5%; ASM gold = 0.3% Gold from red flagged areas = ?

WORLD GOLD STOCKS END 2009: 165,600 t.



Supply Chain Solutions/Vehicles

- Tiffany (no ASGM) simple, but responsible?
- Cartier (small ASGM, perhaps growing)
- FT Gold (ARM's Fairtrade and Fairmined certification) – directly for helping ASM formalise + model for responsible ASM
- Artisanal Gold Fund an improvement fund to capitalize formalisation - monetized by trading gold; it mixes non-profit and for profit mechanisms

Risk

- Will OECD guidance build the fence higher and excludes 90% of the workforce in ASGM?
- Suggestion to formalize is right
- The means must be enhanced
- The barriers to compliance with the guidance must be lowered or subsidized
- 90% of the golden work force does not have the capacity or the incentive to follow the guidance
- Become more vulnerable
- Become in an even worse bargaining position

OECD Due diligence to an ASGM community



Hans Rosling – Means and Goals in development

The dimensions of development Means Goal Human Rights -5-5-5 Environment ++ Governance ++ Economic growth Education ++ Health Culture

Big Picture

 To genuinely solve the problem of making gold sustainable and supporting human rights, the OECD needs to work proactively to support the economic development and reduce the poverty of 10 million miners currently operating in high-risk areas

